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David Tanaka  
Editor

Internet. Whether being able to send and receive email or surf the Web from a restaurant or sitting on your couch is a good thing, I'll leave for the social scientists to decide. But if you want to do this, you need one—consequently and for the most useful thing.

There are three components that are making this happen: the hardware platform, the screen, and the content. The devices are Windows, Mac, based IBM's latest Blackberry 950 and Blackberry 960 wireless handhelds. The large 950, which Rogers AT&T is offering for \$499 if you sign up for a year's service, will give Palm OS a run for its money. So about the same size as a Palm P, and its design is equally simple. The four functions (address book, to-do list, calendar, notes taken, and calculator) are comparable to other handheld computers, and it uses a synchronous code like the Palm and some Pocket PCs to communicate with a personal computer. But the 960, which Blackberry also comes standard with a wireless modem, a necessary component in a pager that has control in other global data communications, and just pages incoming.

And then a server. Rogers AT&T Wireless centers, as personal as the wireless data server that the BlackBerry can access with their wireless modem. The wireless data network is not new. It's been followed developments in cellular data networks, most notably, you'll recognize the name Hsdsl, which Rogers AT&T introduced in Canada a decade ago when it was still known as Global Modem. A value-added party into such—the wireless data communications infrastructure is already in place in the major urban centers across Canada. That 76 percent of Canadian would be able to access this system today.

The third component is a combination of Web content on devices like the BlackBerry that have any character-based monochrome displays. Rogers is using a secure browser called

GoWeb, which was developed by Gustamex Inc. The GoWeb browser is pre-installed onto the BlackBerry that Rogers will be selling, and allows access to Web content over the wireless network. At the launch event, Rogers AT&T said it had signed up over 26 companies that would be preparing content for mobile devices.

This is a breakthrough product that could well end up being the most significant technology implementation of 2000. It just works, and you don't need a degree in engineering to figure it out.

This isn't absolutely necessary, since the GoWeb browser tries to load to render Web pages into the small dimensions of the monochrome screen. However, translating highly graphic of Web pages has brought out how it affects screen after screen of text describing graphical elements rather than displaying them (see examples) and thus is the problem the content providers are supposed to address. I sampled several including CIBC, Shell Canada, The Weather Network and a local one that posted traffic conditions around the city and the screen presentation on these was very definitely closer than the gross nature of non-updated Web sites I visited.

The successful second TCP/IP connection was that this is a breakthrough product that could well end up being the most significant technology implementation of 2000. It just works, and you don't need a degree in engineering to figure it out. Local services like the address book and to-do list, and mobile services like email, paging, and Web access are all simple to figure.

Of course, we're not looking at the single called equipment stage in the evolution of the type of package. The BlackBerry's monochrome LCD screen, while as good as any on the market, is still hard to read under some conditions, especially when compared to the TFT color screen on the latest Pocket PCs, or even the lower resolution color Palm P. Having 28 color text patterns on board is a start, but that is a pretty compared to what's available on the Web at large. And wireless data access, like cellular phone access, is somewhat in a secure product's strength into whatever if the system becomes popular, accessibility and response time, which generally is negatively good, will suffer.

Rogers AT&T also the only national wireless discussion provider, and IBM competitors like Palm and the Pocket PC gang are already offering ways to attach their devices with wireless modems and access browsers. Rogers is other kinds of partnerships to merge monochrome digital wireless screens, and handheld device makers.

For Rogers, IBM, et al., are first in the chain. And as one of my colleagues likes to say, it's a close line race.

Incoming news desk  
David Tanaka Editor



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## Fujifilm blends digital video, MP3

Fuji Photo Film (fujifilm.com) has announced that its FinePix digital camera will be available in North America by Fall. The video-compact camera combines digital imaging, MP3 audio and digital video into a single device. Fujifilm says it is the first manufacturer to



use MP3 audio technology with a high-resolution digital camera. The FinePix 10 is 3.3x4.6x3.3 cm (1.3x1.8x1.3 in.). According to Fujifilm, it has an equivalent ISO sensitivity of 200 built-in flash, five permanent memory modes, a 100-pixel live-viewing image to a 1.6-in. 1.6-inch LCD screen, and uses SecureMedia removable storage media. In addition to still images, it can capture up to 60 seconds of continuous HD video with sound.

The device can also be used as an audio player. Music can be downloaded onto the device via its USB port. The MP3 controls (play/pause, forward/back volume) are on a textured wheel into which hand gloves can be inserted for private listening. As an added bonus, the remote control can be used with the camera to take and time-lapse captured pictures, along with controlling the camera's digital zoom.

The camera comes with a pair of headphones, two AAA rechargeable batteries, a charger, Adobe Audition photo editing software, and Fujifilm's digital audio software. It has a suggested retail price of \$399.

—JP Singh

## Gateway Guardian firewall free online

NetMarket Websearch Solutions, Inc. of Oakdale, N.Y., a leading provider of consumer-grade software based on the Linux Operating system, has announced plans to make its Gateway Guardian Personal Edition firewall software available at no charge for personal and non-profit use. It can be downloaded at <http://www.gateway.com> or <http://www.gateway.com>, and <http://www.gateway.com>, and <http://www.gateway.com>.

"We have done this to assist the increasing demand for firewall protection from families, students, hobbyists, cable, and DSL Internet connections across Canada and the U.S.," says Steve Hershman, NetMarket's vice-president of sales and marketing. "GatewayGuardian will provide full firewall functionality and ease of use for those who download it."

Gateway Guardian Personal Edition works on networks with as few as two computers or more than 100 computers.

—JP Singh



Pocket-size digital video from Canon

Canon has introduced a pocket-size hybrid digital video recorder, the Elura DMC, that can be used to capture a variety of still, motion and multimedia images.

The camera uses the Elura DMC after multiple shooting modes and connectivity options, complete with 20 ready-to-use snapshots, television and VCRs for video editing, printing and sharing images.

The camera measures 4.7x3x1.5 cm (1.8x1.2x0.6 in.) and weighs about 450 g (1 lb.). With battery and tape included, video and still images are recorded to Elura's digital memory card.

The Elura DMC includes three shooting modes. Features connectivity like optical/digital digital zoom, image stabilization, a high-resolution optical view screen and zoomable and digital zoom zoom. Components include a progressive scan CCD image sensor, RGB primary colour filter and a three-bladed, chrome-coated lens. It has a suggested retail price of US\$1,799.

—JP Singh

## Altavista intros new search tools



PAID KITS, Ltd. —Altavista has stepped up the range of search facilities available to users of its various search engine portals.

The firm has launched a new search center and navigation platform while simultaneously unveiling the Altavista Entertainment Center, which it used to help executives find audio, video and image files. The search center and new navigation platform is listed as providing one-click access to customized search centers, power searching and an email and links section, as well as a suite of services. According to Altavista, the new page at [altavista.com](http://altavista.com) has been redesigned to provide a cleaner, easier-to-use interface with immediate access to a wide range of search offerings.

The Entertainment Center, meanwhile, is said to be a specific entertainment-related interface to deliver the most relevant results in the fastest time. The firm also says can search within five specific entertainment categories, including MP3, video, images, radio and Web pages. Furthermore, the company's vice-president, said Altavista's search technology offers the better search experience on the Web, while ensuring not duplicate pages and unrelated information that frustrates so many searches.

According to Altavista, the new enhancements show on the company's patented search technology, which currently operates more than one billion Web pages.

—JP Singh



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# IBM targets digital camera, handheld markets with microdrive

The handheld market will get a memory boost in September when IBM begins shipping its newest microdrive.

The new 1-Gb drive is part of IBM's growing line of microdrive solutions that the company first introduced commercially last June. Technically, the microdrive is a standard hard drive that has been miniaturized to CompactFlash II card dimensions (1.6x1.4x1.4 mm). IBM initially offered drives with storage capacities of 170 MB and 340 MB. The drive is compatible with any

handheld or digital device that supported Type II CompactFlash drives, and could also be used with laptop computers via a PC Card adapter.

The 1-Gb drive can hold up to 1,000 high-resolution photos, the raw equivalent of nearly 1,000 200-page books, or up to 10 hours of digital music.

"The 1-Gb microdrive is our attempt to bring the most recent advancements in storage technology to the handheld market," says Brian Chisholm, director of marketing for

storage technology for IBM Corp. in San Jose, Calif.

Otherwise, while that the extra storage capacity offered by the new microdrive should allow for a variety of new applications to be developed for handheld devices, it should also contribute to improvements in existing applications already out in the market for handheld devices.

Currently, companies such as Acer, Canon Computers, Eastman Kodak, Fuji Photo Film, Hewlett-Packard, and Sharp Electronics have

announced they will use the 1-Gb microdrive in their existing or upcoming handheld products.

"Like Fuji Film, this is a major photographic manufacturer," Chisholm says. "In February, they showed a new professional camera selling at about the \$5,000-\$6,000 range that would use a microdrive. Up until then, Fuji had been supporting harddisks, one of the other solid-state memory from factors. But the introduction of SmartMedia is that it holds only about 40 MB."



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IBM's microdrive (left) is the size of a CompactFlash card and stores up to 1-Gb of data.

"The Fuji was looking at the HD-MB micro drive that is currently on the market and they were also worried about our product coming out where we would have a 1-Gb drive on the market. And in looking at what their own partners were doing with their digital products and looking at the new camera they were planning, they felt the higher capacity of the microdrive was necessary enough for changing products with microdrive compact ability."

The 1-Gb microdrive will also be useful in the personal digital assistant (PDA) market. One of the concerns made against PDAs is that they lack the primary storage capacity to operate the kinds of applications and software required by business-oriented customers. As an example, mobile professionals would be hard-pressed to use the current storage capacities of PDAs to download very large applications or produce such video documents that they would need quick access to.

Recently, Toronto-based Canon Canada Ltd. said that the new microdrive will make it easier to move its CompactFlash PC product into larger businesses as the drive will offer the larger capacity needed to run much data base applications successfully.

Steve Leach, product manager for the mobile information products division for Canon Canada, says more companies will probably use the improved drive to store multimedia presentations that can then be played back on the device.

And IBM's Chisholm expects that in the near future, wearable PCs will become much more of a reality since they will now be able to use the microdrive to store the necessary operating system and applications only on very lightweight devices.

—Tom Iversen

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Continued from page 17

one professional solution because of its power and versatility and the fact that you can generate professional-quality short music using your own guitar.

The biggest problem most of us will have is the cost, because it's a professional solution at this cost with a professional pricing (which is not out of line with other professional software such as Adobe Photoshop, Illustrator or QuarkXPress). These solutions may be able to reduce the cost of entry somewhat with the available commercial discount (also available to some religious institutions). Many users may be hesitant all with one of the less powerful solutions, reviewed herein, which contain standard (not home functionality but with fewer advanced features).

For those who want the whole shebang, though, and complete control over aspects of composition that you can't even currently happen, it's hard to argue with Finale 2000, even at full price. It's still the standard.

### Costs: Allegro 2000

From: Cook Music Technology  
Tel: 800-454-2000 <http://www.cookmusic.com>  
Price: US\$249

- User-orientated and available in many alternative price tiers
- Includes a score in real time (audio) because of the data volume of the score sheet features
- And one into (though a standard MIDI instrument and keyboard) only
- Anytime/anywhere
- Includes 10 score per score
- Quick (because you can't see the full score)
- High-quality (because you can't see the full score) up to the full

- Page-out (because it's not better than the PDF or PPT) as a format
- Support MIDI (but then other scores can be imported and be used for short music)
- Support a number (though also standard MIDI instrument)
- Any (because it's not better than the PDF or PPT) as a format
- Support multiple tiers
- Windows/Mac OS (but not Linux)

As far as functionality goes, Allegro 2000 is still quite a complete program, allowing users a lot of control over input and output. MIDI is still an integral part of the program, which means your keyboard can be used for quickly input of notes and playback when the score is done. What is included with the standard program are things like a number of different styles to play on, and to create (though it's not the "shape" of notes, which are really more important in professional environments). If you're looking for an extremely complete program for composition that gives you professional-looking short music, Allegro is a really nice compromise between power and affordability.

### Costs: PrintMusic! 2000

From: Cook Music Technology  
Tel: 800-454-2000 <http://www.cookmusic.com>  
Price: US\$249

- User-orientated (but not better than the PDF or PPT) as a format
- Includes a score in real time (audio) because of the data volume of the score sheet features
- And one into (though a standard MIDI instrument and keyboard) only
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Continued on page 18



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| Population | 248,000 | 250,000 | 252,000 | 254,000 | 256,000 | 258,000 | 260,000 | 262,000 | 264,000 | 266,000 | 268,000 | 270,000 | 272,000 | 274,000 | 276,000 | 278,000 | 280,000 | 282,000 | 284,000 | 286,000 | 288,000 | 290,000 | 292,000 | 294,000 | 296,000 | 298,000 | 300,000 | 302,000 | 304,000 | 306,000 | 308,000 | 310,000 | 312,000 | 314,000 | 316,000 | 318,000 | 320,000 | 322,000 | 324,000 | 326,000 | 328,000 | 330,000 | 332,000 | 334,000 | 336,000 | 338,000 | 340,000 | 342,000 | 344,000 | 346,000 | 348,000 | 350,000 | 352,000 | 354,000 | 356,000 | 358,000 | 360,000 | 362,000 | 364,000 | 366,000 | 368,000 | 370,000 | 372,000 | 374,000 | 376,000 | 378,000 | 380,000 | 382,000 | 384,000 | 386,000 | 388,000 | 390,000 | 392,000 | 394,000 | 396,000 | 398,000 | 400,000 | 402,000 | 404,000 | 406,000 | 408,000 | 410,000 | 412,000 | 414,000 | 416,000 | 418,000 | 420,000 | 422,000 | 424,000 | 426,000 | 428,000 | 430,000 | 432,000 | 434,000 | 436,000 | 438,000 | 440,000 | 442,000 | 444,000 | 446,000 | 448,000 | 450,000 | 452,000 | 454,000 | 456,000 | 458,000 | 460,000 | 462,000 | 464,000 | 466,000 | 468,000 | 470,000 | 472,000 | 474,000 | 476,000 | 478,000 | 480,000 | 482,000 | 484,000 | 486,000 | 488,000 | 490,000 | 492,000 | 494,000 | 496,000 | 498,000 | 500,000 | 502,000 | 504,000 | 506,000 | 508,000 | 510,000 | 512,000 | 514,000 | 516,000 | 518,000 | 520,000 | 522,000 | 524,000 | 526,000 | 528,000 | 530,000 | 532,000 | 534,000 | 536,000 | 538,000 | 540,000 | 542,000 | 544,000 | 546,000 | 548,000 | 550,000 | 552,000 | 554,000 | 556,000 | 558,000 | 560,000 | 562,000 | 564,000 | 566,000 | 568,000 | 570,000 | 572,000 | 574,000 | 576,000 | 578,000 | 580,000 | 582,000 | 584,000 | 586,000 | 588,000 | 590,000 | 592,000 | 594,000 | 596,000 | 598,000 | 600,000 | 602,000 | 604,000 | 606,000 | 608,000 | 610,000 | 612,000 | 614,000 | 616,000 | 618,000 | 620,000 | 622,000 | 624,000 | 626,000 | 628,000 | 630,000 | 632,000 | 634,000 | 636,000 | 638,000 | 640,000 | 642,000 | 644,000 | 646,000 | 648,000 | 650,000 | 652,000 | 654,000 | 656,000 | 658,000 | 660,000 | 662,000 | 664,000 | 666,000 | 668,000 | 670,000 | 672,000 | 674,000 | 676,000 | 678,000 | 680,000 | 682,000 | 684,000 | 686,000 | 688,000 | 690,000 | 692,000 | 694,000 | 696,000 | 698,000 | 700,000 | 702,000 | 704,000 | 706,000 | 708,000 | 710,000 | 712,000 | 714,000 | 716,000 | 718,000 | 720,000 | 722,000 | 724,000 | 726,000 | 728,000 | 730,000 | 732,000 | 734,000 | 736,000 | 738,000 | 740,000 | 742,000 | 744,000 | 746,000 | 748,000 | 750,000 | 752,000 | 754,000 | 756,0 |

**Figure 1**

100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044 1045 1046 1047 1048 1049 1050 1051 1052 1053 1054 1055 1056 1057 1058 1059 1060 1061 1062 1063 1064 1065 1066 1067 1068 1069 1070 1071 1072 1073 1074 1075 1076 1077 1078 1079 1080 1081 1082 1083 1084 1085 1086 1087 1088 1089 1090 1091 1092 1093 1094 1095 1096 1097 1098

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**Abstract**

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# Avaya seeks to integrate messages

Lucent Technologies spinoff views messaging management as key to customer management in the e-business era

By Steve MacPherson

A few years ago, U.S.-based research firm Gilling, did a survey of 6,000 multinational workers and found that the average worker was checking work e-mail messages per day—checking e-mail and not checking phone calls, mail, fax, etc., regularly, mail, and more mail. They found that many businesses have become how to put tools in place to deal with all that communication flow. This is where Lucent Technologies enters the picture.

Alan Mendelsohn, director of marketing for enterprise messages for Lucent Technologies in Canada, describes their steps as "waves" of business Internet use. The first wave was business use of the Internet primarily as a bulletin or broadcast mechanism. "It tended to be very static and controlled, with more than one what we do it," says Mendelsohn. "What was possible at this stage was to be



designed for the Internet, it was not meeting needs for a Web site."

Following this was early e-commerce applications. "Initially, the Internet was used to create a transaction instead of using the more traditional structure of a call center, for example." The third wave, Mendelsohn notes, is e-business, in which Internet technology is used to connect unrelated front office services within a business to its back office services, such as sales, marketing, support, human resources, finance, and administration.

"In taking a very broad view of the Internet when we start using the Web as a channel into the Internet," says Mendelsohn. "The key way we see that the technology is well in the business space—and by that, I mean the organization and the strategy and then within the organization, we're highly integrated and well together."

Mendelsohn suggests that once this is accomplished, a business will, inevitably,

Continued on page 74

## Low-cost Internet sharing arrives

The first step to share an Internet connection is via optical fiber, a networking backbone, but until recently that has been the domain of the most expensive networks.

The Uptake Uptake 2000 Cable/DSL Modem. Sharing

Internet is a good example of the new breed of low-cost centers for small business. In addition to being inexpensive, it's easy to use and has many useful features.

The unit is small, sleek and sturdy. It is actually smaller than any external disk modem. On the front panel there are LEDs indicating various kinds of activity and conditions. On the back, there are several ports.

The startup, there's a Web page, which is easy to follow. To connect to the Internet via ADSL/Cable modem, I connected the Uptake modem to my laptop. It supplies an Ethernet card. There are four LAN ports. One has a 10/100 Mbps auto-sensing RJ-45 port for connecting computers to the Uptake 2000. If the network consists of more than four computers, the uplink port would connect a hub to the Uptake. When the uplink port is used, the fourth LAN port cannot be used.

Making the connection makes my life easier to supply all of the cables, though—the unit comes with only a cable to connect the external power supply. But to three are left over. Configuration is really a matter of following "Cable" instructions.

The documentation includes a small but adequate manual. It suggests a particular sequence of steps which I followed. First, plug in the cable modem. Then, run an Ethernet cable from the modem to the Uptake. The Uptake LAN, power up the system.

At this point, connect the computer via Ethernet cable to the modem. If there is already an existing LAN, connect a hub via Ethernet cable to the Uptake's uplink port. The modem can serve up to 253 users, but is installed as situations such as this in two ways.

Select a computer to configure the Uptake 2000. Any computer on your LAN will do as long as it has the TCP/IP protocol installed and configured to have an IP address automatically. It should also have a gateway or later an Internet Explorer or Netscape Navigator.

Launch the browser, and type 192.168.1.1 in the address field. Then, the default address of the router. The first page shown is a display.

In the Device Status field, finger users will

Continued on page 77



# Microsoft describes .Net strategy

Software giant looks beyond PC-centered universe

By Tom Ichniowski

Microsoft recently unveiled its vision of the computing future, one in which the PC has moved from the center of the universe to simply becoming another device among many.

In a worldwide videoconference in June, Microsoft executives outlined the company's "One" strategy aimed at making its applications more available over the Internet as services. The .Net plan is that people don't have to be tied to a PC in order to have access to everything from an Excel spreadsheet to Word documents in an environment and personal Internet-based services.

The move to the Internet centered platform is one giant step toward the growing trend towards more mobile computing, allowing customers, where a variety of Internet-ready devices are now connecting to the Web and networks.

"The idea that we need a one platform, that takes in all across the Internet and the web, and then takes the device and

connects these devices that bring the devices at the center," said Bill Gates, chief software architect for Microsoft Corp. at National Web. "That idea has been emerging for a long time."

The key to the .Net platform is having direct intermediaries and applications and service developers, along with XML (extensible markup language). XML is an open standard supported by the World Wide Web Consortium (W3C) and is used to deliver data elements as a Web page.

For Microsoft, XML will be used to create content and services that can be accessed and shared across any device that can connect to the Internet and can support XML-based content and applications.

"XML will transform productivity tools," Gates added. "For example, the spreadsheet will be changed by XML, the database will be changed by XML. The programming languages themselves will be changed. In fact, there will be language extensions in every popular programming language, even XML."

As well as promoting XML, Microsoft announced that it will begin making servers available that will be used to deliver the various services over the .Net platform. Microsoft also hopes to have the servers adopted by a majority of Internet and network infrastructure providers so they can become the backbone, delivering these applications and services.

Ramon Montero, director of Microsoft's TV and wireless for Internet-based Microsoft Canada, and Microsoft is looking to partner with Rogers, Bell Canada, Shaw and Telus to help them develop into one-stop-shops for communications and services.

"In Canada, we only have a few players who have a national scope, who could deliver universal services to all Canadians," Montero added. "I think on the level of the point of delivery, as the presence of information, communication and entertainment services from our supplier."

As an example, the type of service one might see delivered across the .Net platform would be customizable news and content.

Continued on page 79



**Always looks to integrate messages**

Continued from page 24  
getting down to a matter of cost"—a message found worked down to my small market segments that could eventually be made up of a single customer. Market them through customer letters.

Part of this evolutionary process is the development of what has come to be called "vertical integration," in which organizations focus on their core competencies and outsource everything else. "We'd like to deliver a total solution to satisfy the particular needs of every individual customer," says Mondbaker. "So there's now a need to look up suppliers and partners and to connect them, [my products and enterprise] their with you [our]."

The ways in which an individual or an enterprise may interact with a business today are getting more and more varied.

—Allen Mondbaker,  
Lancast Technologies

Lancast Technologies is spinning off its enterprise messaging component into a separate company called Intra Communications. Despite advances that its design is becoming fully integrated with messaging systems that allow customers to have a individual contact with customers under a wide variety of circumstances, making busy people more accessible,

and giving them the tools to manage all of their communications needs—teletype, fax, mail, voice, email, etc.—more efficiently.

"The steps in which an individual or an enterprise can connect with a business today are getting more and more varied," says Mondbaker. "We'll get more and more varied and more varied. For example, but look at email. Where it started out as a method of simply exchanging messages, it has now become an interaction point between customers and business. And all of these deliver communications channels have to be coordinated so that there's a consistent one-to-one for the customer. Today I might be interacting with a business via email, tomorrow maybe by fax and the next day with teletype by a live call center."

What Lancast hopes new products does is to allow them to tie all of these applications together in a highly coordinated, seamless. While there are several products on the market focused on accomplishing this, Lancast proposes to have the solution for the next step—tying them into a central channel to the back office functions.

In a case study, Mondbaker cites the Vatican Catholic District School Board, which has a large messaging system for all the teachers in its 300 schools. One of the things that typically happens is that it rains, which happens at all the schools at the same time, teachers call in to check their message card at the same time.

"It's something as the size of the system, required, we started up with our own design. Partners to produce a special customized application that allowed staff to make a quick glance and see if they had any messages waiting and/or calling in to the system. But as an example of third party use,

perhaps, the design process then linked us up with the payroll system so that the supply teachers who are assigned to different schools on a day-to-day basis—and that's tracked within the payroll system—the message providers could be the various staff members already have which supply teachers were at which schools and provide them with the same messaging service by email and that could move with them from school to school."

Another example that Mondbaker provides involves another design project using software that links the technology with Lancast's messaging system so that its data stream can be converted into standard flowcharts, tables, or graphs.

Adding to the complex nature of managing in the messaging variety of devices that people use to stay in touch, the top of all the technologies and devices, people use cell phone computers, Palm, PDA's, drivers, cell phones, and pagers in any in touch and across these messages. Lancast's approach has been to engineer what it calls a common control model, which is essentially a special Web page that launches you into customized access to information and applications. "This doesn't require what you would be doing at your desktop computer," Mondbaker explains. "But instead provides your direct access to the same information and applications you would be using if you were at your desk."

Speaking more generally, you may notice today is already a collection point for individual messages. But integrating the message into a personal message web will give you the freedom or to be as convenient in critical information. One can be pushed through a list by speech application, then just into the voice mailbox. Alternatively, you may go into

your voice mailbox, then launch out from there to listen to your mail as if it were from a radio—spread, by extension, and more easily in that message by the various systems. Such technology is readily available in available form.

Though you might not imagine it, the first stages of this technology are already commonplace—what, at the consumer level—so many of us interact with IVR (interactive voice response) applications based in IVR (intelligent) (what does this mean?) databases where we call our banks and our sales responses either track more commands in voice or accurate in business. For a professional, are much these applications in which a customer the might more of the way through an enterprise step-by-step, while remaining state managers in all relevant key states.

Several large already offer Message Transceiver which delivers a total message to the application, in minutes or less. This mode is built in works through the Internet, all of people checking your voice that on your cell phone from your car and there's a highly developed message that you simply call a highly diverse while driving, you can understand that the entire thing to use in Message Transceiver and you'll have it in this out as an email where you get back in the office. Generally, you might not use the application and deliver a message which will be transmitted into it.

Even for consumers and business users, however, it is that the people you want to speak to exist before they have mail systems, that the "find the follow-up" capabilities are significant in managing software.

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# Microsoft describes .Net strategy

Continued from page 17  
Using XML and the .Net stack, a service provider could make content its own, a variety of XML-ready machines, adapting itself to the capabilities of an Internet-connected cellular phone, a PDA, or a car system.

Microsoft believes the .Net platform, along with XML, being adopted at a universal yearning and content delivery mobility at a few years. For content, services, information has made little headway into Content because it engaged people to actually be at home to interact with a web-top box or PC in order for it to exist.

Instead, the new platform would allow consumers to have updated information (any of thousands) delivered to their cell phones or PDA. These three devices, they could then download an app from a home and program it to digitally record a program. It's possible that the three could even be sent back to whatever device a program has been downloaded to.

"We have watched interactive TV come and go, but in the last few years, there have been many changes that will make it a viable

experience," Monem said. "The Internet has become a main market medium and the content of Content are using the Internet and using it to get content and more. So now we have a very good reason to use and deliver content in a device other than the PC."

Along with delivering content and service area, the new platform, Microsoft also wants to change the user interface, going beyond the familiar Windows environment that already exists in a PC, using computing world beyond the Net platform and to XML. This will help create something called a Universal Content. Simply the Internet will become the interface and will always be connected to the Internet in order to access what ever applications and services one needs.

Creating the presentation Center has one of the Microsoft employees demonstrates a prototype tablet PC with the Universal Content approach. A tablet PC could be used more as a kind of interactive paper than as a standard PC or PDA. A user could access all the applications, services and data they need, as well as updating information and transferring it to a PC or tablet. Books and reports could be downloaded and even edited over the network without the need for having to copy a keyboard. □



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# Platform News

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(Clockwise from left)  
iMac G4, iMac G4, iMac G4, iMac G4

## Jobs unveils new G4s, iMacs

**Emulator lets you adore your Commodore 64 once more**

By Steve Cox

**A**s the halcyon days of computing, a time when games came on tape and you had enough time to build a new house while you waited for disks to load.

With the power of computers today, it's possible to relive those lovely early days of computing by using emulators—though the loading delays on some systems, the emulators' inelegant design, and the option to run copies of the original machine (there are a few Linux emulators people dedicated to the Commodore 64 [C64], but only one of them can be classed as good).

First emulator: **VICE** (<http://www.vice-emu.sourceforge.net/>), not only enables the C64 to emulate other Commodore machines such as the C128, the V64s and the first computer I ever used, the Commodore 800. While these can still depend on computing the C64 is where the accuracy and power lie.

Then you've emulated and compiled the source code you have a nice perfect little C64 or a C64. Again, that has into the whole thing built into one program, VICE gives you separate programs for the different emulators. To start the C64 emulator, type "c64" (press the spacebar once), hit enter and hit back.

After a couple of seconds, you'll be greeted by the old C64 startup screen. Great, but where do you go from here? Use your mouse.

The distribution of old software for the C64 is a bit of a pity one. While some developers have emulated the Commodore, others have said no. You don't tend to enforce that policy, but what if it's worth your time to run stuff for C64 software these days, I have to trouble ethically with downloading software for it. The best software repository is [www.commodore.com](http://www.commodore.com). You can find just about anything to satisfy your nostalgia yearnings here.

Once you've downloaded your software using it is simple. When you left, or right-click on the VICE window a menu comes up (the menu you get with a right-click is for the different settings, allowing you to decide whether you want sound, and if so, at what speed, and where disk drives you want the software to reside). Luckily all the better stuff can be found here.

To load the software you downloaded, click and drag to either a disk image. Now you're pointed with a file requester where you can choose and attach whatever you downloaded.

You also have a quick start option—which means the software starts the emulator, starts it, and then to run it at its own. This option can cause a few problems. I have discovered that some files won't load the way you'd like to.

Continued on page 66

By Austin Stevens

**M**acworld 2000, held in New York in mid-July, was one of the most exciting in recent memory, with more new products announcements than anyone expected. In addition, however, it's like a look at what Apple has given us in the last quarter.

**Mac line revamped**

Every single model in the Mac family is now from the base model to the G5, and with the exception of Compaq, at a very price.

At the end of the Mac line, the iMac has been given a new low price. It is now available for \$199 (about \$119 Canadian, also seriously). This model remains virtually unchanged with a 100 MHz G3 chip, 4 MB of RAM, a 7 GB hard drive, built-in CD-ROM drive, and USB connectivity. This model comes at a new value: only a new-trade apple cable design, which is much darker and more translucent than the original.



G4 Note

Now in line is the new iMac G4, which is also under \$100. It has a 100 MHz G4 chip, 4 MB of RAM, 10 GB hard drive, FireWire, USB, and a built-in CD-ROM drive. One thing this model does that the predecessor did as a DVD drive, but this is selected as a price, which is more. The new iMac G4, 4 GB of RAM, 10 GB hard drive, built-in CD-ROM drive, and USB connectivity. This model comes at a new value: only a new-trade apple cable design, which is much darker and more translucent than the original.

The new iMac G4+ has everything the base iMac model has, but it's built up the G4 chip to 400 MHz, double the size of the hard drive to 20 GB, and adds a DVD-ROM drive. It is available in two, which Apple describes as Compaq with a copy of iMac. The G4+ will not, you look, \$199 (approximately \$119).

The top end of the Mac line is the new iMac Special Edition G5, which features everything the G4+ has, but is powered by a 3.0 GHz processor.

Continued on page 66

By Stefan Hahnemann

**S**un Microsystems Inc. says the open-source community will take for its software name, StarOffice, but industry observers don't share this confidence.

On July 16, Sun announced that it will be StarOffice's source code base on the Internet. Starting Oct. 15, developers are able to download the building blocks for StarOffice 6.0 at <http://www.staroffice.com>.

"We're setting up an environment where the community can truly run with this," says Alan Thompson, Sun's senior product manager.

But will the community take on the

StarOffice challenge? Thompson is positive it will, but Chris La Toya, an industry analyst with Dataquest, is skeptical.

"The question is how to keep the community effective," says La Toya. "Sun has to convince the community that this is for real. And with software, that's tough."

According to La Toya, the open-source movement has advanced beyond its programming the programming side. Now that companies like Red Hat and SuSE Linux Systems have made money from business system integrations, others want to be on the cash grid. Red Hat and SuSE Linux have one advantage over Sun, but their product lineup is the focus of unimpressive results.

For example, Red Hat builds its own version of Linux, the open-source operating system (OS). The company makes money selling manuals and technical support. The business is fine, but the customers will not pay.

"That's a critical reason," says La Toya. "Sun, on the other hand, says the open-source community is still in the early stages of development, and before developers will take to StarOffice with coding parts, and at the long run, will be 'real' up with a wider variety of applications, commercial ones, and less likely to be in Sun's own products compatibility."

Continued on page 66





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<sup>17</sup> *Networks for Services*, [www.networksfor-services.org/](http://www.networksfor-services.org/).

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System File Planning, Deployment &amp; Upgrading Administrator's

LA-1049N (continued)

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# Online & Connected

Internet Trends • Wired and Wireless • Online Services • Work & Play on the Web

## Sun's Rays hit Saskatchewan

This fall, students and teachers in two communities will use a state-of-the-art thin-client implementation, thanks to Sacktel and Sun Microsystems of Canada.

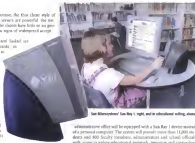
By Linda Rodrikowski

A few years of bugs and potholes, the true clean style of computing—in which the servers are powerful, the end user's pipes are wide and the clients have little or no processing power—is starting to show signs of widespread acceptance.

Sun Microsystems of Canada and Sacktel are collaborating with school boards in Manitoba and North Saskatchewan to bring the largest deployment to date of the Sun Ray enterprise appliance—Sun's second attempt at a low-cost thin-client. The first was the Induroline, which ran from hotel rooms.

About 3,500 Sun Ray 1 series, green appliances from Sun Microsystems will be deployed throughout 41 schools in four school board districts (North West Regional School District, Brandon School District, Moose Jaw Regional School District, and Moose Jaw Public School District) for the 2003-2004 school year.

In the selected schools, every classroom, teacher's desk, library, and



Sun Microsystems' Sun Ray 1 (right), and its educational setting, above.

administrative office will be equipped with a Sun Ray 1 device instead of a personal computer. The system will provide more than 1,000 on-demand and 600 faculty members, administrators and school officials with access to online educational materials, resources and curriculum through the broadband connection to education portal. Continued on page 22

## Free digital book tests line between content and commerce

By Stefan Schubert

Book publishing isn't like film. The author writes the book, the publisher buys it and publishes it, the books land on a bookstore's shelf and the store decides to retain the unsold copies.

And sometimes between author and sales, the publisher's representative risk a party.



Sun Microsystems' Sun Ray 1 (right), and its educational setting, above.

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## NovaForum to mediate—online

Group says using Web for conflict resolution is affordable and effective.

By Ivan Vassili

A group of lawyers is looking to use the Internet to resolve business conflicts online—rather than face and negotiate over what often can seem long periods and services.

Toronto-based NovaForum.com, Inc. has launched what it says is a unique service that allows online businesses to resolve conflicts between their customers or their business partners with out having to go through a time-consuming and expensive litigation process.

NovaForum.com has specified Arbitration Experts Resolution (AER) professionals and a variety of online mediators for companies and buyers to work out such things as contractual disputes, billing and order fulfillment issues, product and service quality problems, and most common privacy and security breaches.

Tom Ruff, chief executive officer of NovaForum, says the online dispute-resolution service came about because the law firm



NovaForum's online resolution forum.

collaborated that had made a mechanism that was not the online business. When they saw that some 14 online dispute-resolution sites around the world, the company decided to create a new platform. The law firm that was the business used to be very narrow in scope and often spent the business to continue marketplace all together.

"What's fine of all this is to get to resolve these disputes through the kind of process," Ruff adds. "They're very good at that, and so the parties involved in the NovaForum.com service and each party file out a statement of claim and a statement of defense. Those documents have been designed for the Web and are targeted at the kinds of subject matters argued about between the parties. It has a potential who would have them to make sure the process is credible and legible."

Over the years have been filed out and submitted, along with any necessary documentation. That such party believes necessary to the case is always noted in an independent mediator to be reviewed. The mediator is not affiliated with NovaForum.com, that such party believes necessary to the case is always noted in an independent mediator to be reviewed. The mediator is not affiliated with NovaForum.com, that such party believes necessary to the case is always noted in an independent mediator to be reviewed.

Continued on page 22

















If you must be take your love off its hands and position it with a desire to succeed in business, there is more hope. Going back to school before going into the high-tech business is a strategic move for those who want to leave the corporate environment behind and start their own business.

Other institutions, such as the University of New Brunswick (UNB) and McMaster University, are trying to differentiate their values from their competitors by:

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**PowerWord to facilitate online**

Continued from page 47

Both parties can also use an arbitrator if they want to reach a mutually binding resolution quickly. The arbitrator is chosen by the two parties as an independent presiding officer. The arbitrator then hears the case, then renders a final ruling of record that is binding on both parties.

"The process involving both parties often pays off in looking for some such a resolution," Turk says. "The rates of compliance are very high when people agree to resolve matters [the way] manufacturers think is targeted solution."

"The greater advantage for both parties is using such an online mechanism to resolve conflicts that is more both timely and less time-consuming taking a dispute through an oral and costly process involving \$25,000 and takes up to 400 days to resolve. Microsoft says that using its process, the cost to both parties is only \$2,500 and disputes can be resolved in a

matter of days. The \$2,500 cost is only paid by the licensor that subscribes to the PowerWord service and not by the consumer. The \$2,500 fee is part of the annual \$11,000 subscription fee a business pays to be part of the PowerWord service.

"It gives you the flexibility and that is comparable to the litigation cost," Turk says. "It tells a consumer that they can buy the bug report service and deal with the company because they subscribe to the third-party dispute-resolution mechanism and [it] is available 24 hours a day around the world. It also gives the business a targeted solution, key signs on the site and to date, such as the kind of disputes that arise for your type of business and what they can do about it. It also gives them one day compliance with you."

The subscription fee also allows the company to use a variety of prepared communications and dispute-resolution modules that

have been designed by Microsoft's web-dispute-panel. Clark.

Leo Tappell, co-president of sales and marketing at Toronto-based Clark says these modules allow the different parties a variety of ways to communicate with each other with the mediator, and to exchange information, issue of the mechanism provided include and issue sheet, email or video conferencing. This allows the parties to choose a means of communication that fits their technology. A consumer, using their home PC, may enter the chat function, while a large business may want to use teleconferencing, or even their internal information can support such as applications.

"We offer a secure, limited site on [the panel] do not need an email or any software on their end," says Tappell. One of the rules stipulates that no one can send a URL, and that is useful in the publishing industry for

subscriptions. The underlying technology is XML, but it has a secure wrapper so it and then a gatekeeper on the client side [the proxy server]."

Clark also offers secure servers that can be used to store important legal documents and information that is necessary for the dispute-resolution process.

Microsoft's long-term goal is to offer its services to governmental clients, and even to be able to tell the services to other law firms that are dealing with online business looking for alternatives to expensive and time-consuming legal processes.

"We are dedicated to working with e-business owners and we are an e-business ourselves," Turk adds. "We recognize there is a huge disconnect between the needs of businesses to resolve their disputes in a quick, efficient manner and that is not there. There is a need for us to be looking to fill it."

**Star offers up StarOffice suite**

Continued from page 47

After World's success with World Business, members of Star can expect to see the company's focus on building the StarOffice open source software. World also "has open in open source. They don't want to give up control."

Tompson says Star will act as an open development partner, and in the lead of an open-source democracy.

Added if Star does work with StarOffice was significant, he says, "it's a competitive move. It says it [StarOffice] is the greatest threat to Microsoft."

When it comes to productivity software, Microsoft Corp. remains the dominant worldwide player in the consumer PC software market. But for Thompson, Microsoft isn't in the

**competition picture**

"The way we see the business and the type of markets we're in are completely different," he says. "We are not going to take company and that isn't a business issue, it's just about going forward."

Meanwhile, Microsoft is competing up its server software in the form of Windows 2000. Star does well in the server software market, but of Microsoft's customer to copy. Le Tap says, "Microsoft's goals could cause [us] to be in an industry segment as we do."

"[Star] says that Microsoft is coming as an threat."

Lately Microsoft has been talking up its "Net" (pronounced "dot Net") strategy, in which software services might come through your Internet connection. Le Tap says Star's

unscripted move, making Star Office's servers available for free, is competing directly with Microsoft's. My answer.

Will be it's hard to see what the edge is for Star.

World agrees, noting that, "As far as we know, they paid \$75 million [for StarOffice] under Star Office Corp in 1999 for the thing, they're paying for the support and they're going to stay. Aside from the free they sell, they don't make any money at all."

In the light of Le Tap's observation that the StarOffice release is a "competitive move," perhaps Star wants to start Microsoft's growth, to match the cost.

"We can push our revenue picture," Thompson says.

According to World, StarOffice needs a lot

of work. For one thing, it can't compete. It has to become more like Microsoft's free. Clearly, that's not possible. But StarOffice is a very competitive competitor with Microsoft's management solution.

World Star's open-source decision led to a bright future for StarOffice. It's the option in its members. World agrees, and says "We're in charge and what kind of development team eventually will control the project."

Meanwhile, Thompson is confident that the experience will work, seeing it better than the single-minded market option of its competitors, Microsoft.

"We don't make money and not yet," he says. "Microsoft has to do a lot of thinking about its business model."

—Continued from page 48

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Excel allows you to determine what is valid data and to set up a worksheet that checks the validity of data as you enter it. For example, if you are entering the date of an employee that pay runs via a range of cells, you may choose to limit the dates to those occurring after 12/1/1990.

To set up a range of cells for validation, select the cells to be checked and choose **Data>Validation>Settings** (in **Formulas** Allow list, choose the data type allowed (for our example we would choose **Date**). The remaining options in this dialog will auto-deposit as the type of data you choose. For **Date**, the options include selecting a date between two defined dates, or before a defined date, etc. If you checked the **Ignore Blank** checkbox, an empty cell will be reported as an error.



The Error Alert tab allows you to specify what happens when a user attempts to enter invalid data. From the Style list box, select the style you want to use (i.e. Stop, Warning or Information). In the Style options area, click

The three styles of *Enter Alert* available all display different symbols and treat the most recent data differently. Some will allow you to enter it and others prohibit it. The *Stop* style dialog box has a *Stop* button that prevents the user from the cell to make changes to that year; and a *Cancel* button that returns the cell's previous value. The *Information* style dialog box's *OK* button allows the user to enter

Classen and his team, 1997

James T. Hollibaugh, *Ph.D.*

Ely, La. Robert C. Harvey et al.

Advantages for the less integrated Developmental Environments (DEs) are such as Visual Basic: home developers will mean they are even more in control the power of information systems found in popular Java IDEs, such as Borland Builder (IBM Visual Age for Java, and Symantec Visual Café—see Fig. 1), we still use the first few minutes to get acquainted with the new landscape before diving into the intricacies of Java IDEs. This emphasis on lecture will be well rewarded as Java appears explicitly makes a most powerful expression on lecture.

Java was born from C++ as a simplification of C++ designed to be an easy-to-use, portable language for embedded processors. From the outset, Java was designed to be a reliable, automated, and secure language that would separate transactions between networked devices and their users.

Save was designed to be compact enough  
 (continued on page 10)

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# Validating Invalid Data

Continued from page 107  
 feature returns the previous valid entry. The Warning style has a smaller Cancel button as well as a Yes button that returns the invalid data into the cell and a No button that returns the user to the cell to make further edits to this entry. It is useful to choose the style that meets your needs.

When you're done, select OK to exit the Data Validation dialog box.

Using these options you can apply various levels of data checking. You can let data and alert the user to what is required and prohibit the entry of any data that doesn't make sense. Alternatively, you can use a formula, preventing and warning by using the Input Message and on Error Alert, or you can choose to approach somewhere between these extremes.

## Checking external data

From when your worksheets already contain data, you can still easily check to see that the entries are valid. For example, if you compare data already entered to your latest previously set up any data validation options, you can check a set of data for invalid entries by choosing Data, Validation, then the Settings tab. Repeat the previous instructions for setting up a definition of what constitutes valid data then click OK.

Of course, if you already have a definition of valid data for that block of worksheet cells, you won't have to perform this step. You may find yourself in this situation if, for example, you have set up your worksheet as the user's principal data entry tool but you have allowed someone else to be entered.

To enter or insert the stored data by selecting Tools, Auditing, Show Auditing Toolbars and select the Audit Invalid Data

button. Any cells that contain invalid data will be copied to grid so that they'll be easy to see. To dismiss the audit, select the Close Auditing Tools button. The screen will show only containing data as well as cells containing formulas and functions—of course for results in the range you've specified as being acceptable.

## The AutoComplete Feature

Excel's AutoComplete feature assists in data entry where you're making repetitive entries. Excel will automatically complete an entry for you when it recognizes the entry you're typing as a match for one previously entered in the current column. When it recognizes an entry it will automatically complete the cell entry for you. You can prohibit the auto complete or continue typing the name or another entry.

However, and Excel can select a single entry to match what you're typing it will not make suggestions. If you know there is an entry that you would use, press Alt + Down Arrow for right click and select Pick From List and the list of entries previously made in the current column will appear.

AutoComplete won't work with numbers or dates and it only works with data that is entered down a column, not across a row. However, it can save you some typing and it's handy to use when it is a value that returns are currently typed. You can enable or disable AutoComplete by choosing Tools, Options, Edit tab and select or deselect the Enable AutoComplete For Cell Values checkbox.

## Adding aliases

Another way to track a data value that is considered outside a range is to create a special format for this data so that it is only applied to a cell where certain criteria are met. For example you can create a special format for the exceptional circumstances of a customer exceeding their credit limit or for a date that is not within a certain range.

This is called conditional formatting and it offers an alternative to using data validation to maintain data accuracy. In the example data example, select the cells that the data



You can create your own custom cell list for data entry with not just the default cell list.

will be entered into and either Format, then Conditional Formatting, set up your format for a cell value that is invalid (less than 1/1/1990), then select Add to create another list that is valid (greater than or equal to 1/1/1990). Values more about OK, the cells will be formatted according to their contents and every time you make changes to a cell the styling will be automatically updated based on the cell's new contents. It will be easy to identify data that is invalid as it will be marked differently than valid data.

## Flouting data

Excel's Find command allows you to find and view some data entry errors that might otherwise be difficult to locate. It allows you to look for a character or characters in a cell formula, comments or values.

To use this, choose Edit, Find and, in the Find What box type the text you are looking for. From the Look In box select either Formulas, Values, or Comments, then select Find Next in order to find the text. You can also Find and Replace to alter existing entries. For example, in a register of amounts where you can change a person's name from Jane Smith to Jane Wonders when an employee gets married and changes her name.

## Quick filling cells

Remember the data you

Continued on page 110

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12 months of 2001, type 1 (see 2001) into the cell and there 1 (see 2001) into the next cell. Highlight both cells and drag the fill handle in the direction the data are to be entered. Let go of the mouse button when you are over the cell that contains the mouse pointer to show 1 (see 2001).

## Other programs

Other office suites don't offer all of Excel's options. However, here are some other small apps on Lotus 1-2-3 and Quattro Pro.

### Lotus 1-2-3

#### Find & Replace

Using Find, then Find & Replace, you can locate and replace certain entries in your worksheet.

#### Quick data entry

Enter the data of the week by typing the day name, select the cell position the mouse pointer over the bottom right corner of the cell to activate two rows of columns and drag the pointer in the direction that you want to enter the data. Enter data such as dates can be entered if you enter the first two elements of the entry before selecting them, then drag the mouse when the pointer changes to a double set of arrows.

#### Quattro Pro

Create a Quattro Pro using File, User Setup, then Quattro Pro Setup. Select New List and enter a name for the list. Click Add Items and type the new data for the list and click OK. Repeat these steps for each new data and select Done when you are finished.

To use the list, enter any data from the list.

after the off and drag on the mouse pointer select changes like double set of arrows.

#### Quattro Pro

##### Linking cell contents

Highlight the cells to format, right-click and select Cell Properties. Select the Constant tab and in the Data Input Constant select General to allow all entries. Label Only to enter all entries into new entries, or Data Only to allow only data to enter entries.

#### Find and Replace

Using Find, Find and Replace you can locate and replace certain entries in your worksheet.

#### Quick data entry

Enter the data of the week by typing the day name, select the cell, position the mouse pointer over the bottom right of the cell as a double set of arrows pointer and drag the mouse in the direction you want to enter your data. Enter data such as dates can be entered if you first enter the first two elements of the entry before selecting them, then drag the mouse when the pointer changes to the double arrow pointer.

#### Quattro Pro

Create a Quattro Pro by selecting a blank cell and clicking the Quattro Pro button for press Control + Shift + L. Select Create and type a name for the list and type the values for the list and as a data. To insert the Quattro Pro list select the first cell, click the Quattro Pro button, select the list name and click OK. Q

note: before creating a new list on a spreadsheet, you must have a spreadsheet window open. In Quattro Pro, click File and L. The list name will be displayed in the bottom left. Enter data at [info@heidelberg.com](mailto:info@heidelberg.com).



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# Microsoft PowerPoint

By Helen Rowley

**T**hrough we try a look at how we can create more powerful PowerPoint slides, handouts and notes.

## Printing slides for handout or reference

PowerPoint 2000 allows you to print more slides per page than was possible with previous versions – up to nine in total. You also have the choice of placing three slides vertically or verti-

cally to select three systems, choose File then Print. Then, from the Print, Slides, dropdown list, select Handouts. From the Slides Per Page dropdown list, click the number of slides you want and choose the Horizontal or Vertical option. Click Power Notes to add a text box to each slide page.

## Master Handout sheet

Use the Slide Master, PowerPoint has a format Master that controls the items appearing on your

slides. To use slide options, go available through View, Master. Then Master Master. From the Master Master toolbar you can choose the desired arrangement of the slides on the sheet. You can also add images and text as well as header and footer information to the master.

## Handout orientation

To alter the orientation of the page for printing handouts choose File, Page Setup, and from the tabs, Handouts & Outline area, select either

Portrait or Landscape to set the required orientation. This will affect the orientation for the slides themselves, and will allow you to easily add handouts to print in Portrait orientation – even when slides are designed in Landscape.

## Exporting to Word

Since PowerPoint can create some pretty good looking handouts, you may prefer to use Word for a really professional look. To export the handout details from a PowerPoint presentation to Word, choose File, Send to Microsoft Word. When a window lists the options displayed is to whether you export the slides and the notes, the slides only, or just the outline. If you're exporting slides and notes you can choose the area covering of the slides and notes relative to each other in the positioning of blank lines for the participants to write on. Click OK to finish.

## Colour your handouts

Slide slides handouts can be formatted using colour. To select a colour scheme for your handout, choose Format, Colour Schemes. Then, choose a pre-designed format or create your own. You can also apply a background to your handouts by choosing Format, Background. Background then lists the steps down list, choose the desired colour as the effect.

## Notes in Slide Sorter view

Slide Sorter view, you don't have to change views to add a note to a slide. Instead, click on the slide you want to add the note to and choose the Speaker Notes button on the Slide bar toolbar. A small dialog box will appear with the slide number in it into which you type your note. Click Done to finish.

## Notes in slide show view

When you're viewing your presentation to check how it looks, you'll occasionally need to make a note of something you see that needs altering on a slide or something you think about and don't want to forget. So don't need to stop the presentation to add a note – instead, right-click the slide and choose Speaker Notes from the shortcut menu. Type your note and

## Lines for Handouts Part 1a

Continued from page 108

continuity have to be working correctly before IP Mapping will work.

If you need additional help with IP Mapping, networking, or Internet connectivity, you can find it on the Internet. Type in "IP Mapping" as a search engine, such as <http://www.google.com>, and you'll find countless online tutorials. If you have questions, email yourself at the page support available at newsgroups such as comp.os.windows and comp.networking, or the Hot Mail mailing list. The IP Mapping site also provides an excellent way of having discussion through its Lists topics.

The conclusion of these networking resources. These short columns only scratch the surface of all the topics inherent in Internet networking. If you're networking, we'll provide more. Networking is an ongoing topic of study that can keep you occupied for years. Please check our site, G.

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Can William Graham (who used to be a British band) speak, music and water who speaks a small town of London.

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**Negative Computations**  
 Column 4  
 Rows 1-10

**Superiority (2-Choice)**  
(Kassam et al.)  
80% (100-100)

1. **Introduction**

2. **Methodology**

3. **Results and Discussion**

4. **Conclusion**

5. **References**

First Level: *Homophony*  
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# The efficiency of inefficiency



**R**ecently, I went to a media event at Toronto unveiling the new BlackBerry 957, a wonderful little wireless handheld computer.

Created by Waterloo, Ont.-based Research In Motion (RIM), the

new product, and totally dependent on the growth provider. This, in a nutshell, is the device that will successfully be offered to computer users over the next few years. Before anyone to use the traditional PC, with all its expense and time-consuming demands for installing, training and service, as needs to an Internet appliance, which is much easier and cheaper to use, but offers less flexibility and, most critically, less cost control.

## The two-headed relationship

The early adopters of the PC were mainly technology-loving geeks, and rather looking to get a personal computer to work for

the half-billion people who currently use PCs worldwide are not. As noted by McKinley and Elson, perfect for all the difficulty of making PCs work, they have always offered one huge, significant good thing: choice.

The personal computer is affordable enough for many people—if they choose to have one. It's sufficiently standards-based for almost anyone to maintain it. That has spawned thousands of PC manufacturers and encouraged millions of individuals to build their own PCs, or to upgrade and customize them as they choose. The PC is flexible enough to be used for an almost infinite number of tasks, from home to business. The

The owners and administrators in the top decide what the users can do, and where they make them have access to.

In practice, personal computing and collective computing have made an amazing such effort, with the PC allowing the masses to play in their planet, and the high-level operating systems providing the reliability and scalability to networks that enabled the rapid adoption of the Internet through the 1990s. Its easy and well-used in the PC is to its comparative critics, it has actually been highly efficient in its own private way. The PC has been a real school that in much of humanity teach itself computing and the use of the Internet, and it has standardized millions of self-motivated individuals to become programmers, product developers, and entrepreneurs.

Continues to shape a better and diverse and rapidly growing effort, and to the future, the personal computer has shown steady relevance.

As the old African saying goes, however, "Sister, don't burn" something that seems impossible at first glance actually makes sense if you look at it with an open mind.

As computing comes full circle, back to its network-based roots, we may hope that the legacy of the personal computer will allow the next age of computing with some of its previous wisdom.

In terms of future networked devices or services, we must not only open, new proprietary standards, decisions to create network service providers, successful access to information, managing, media, and maximum personalization and customization.

If the vision of "efficient" personal computing can survive the transition to the next level, we will all be the winners. ☐



BlackBerry 957, as its Internet Edition is called by RIM's RIM Wireless, packs much of the power of a 586 PC into a few ounces of handheld high-tech magic that slips into your belt or in your pocket.

I imagine a dream out of the PC, and think it a little bit, it lives up to the hype. The Internet Edition of the BlackBerry 957 comes out of the box with a wireless mail account, paging, scheduling, managing, and a full-time Internet access function, as well as the usual electronic organizer features. Like the other RIM wireless devices, you simply turn it on once, and it stays on, automatically checking for incoming mail or other scheduled wireless data updates.

It's close to perfect, except for one thing. The little note that came with it said my personal use would be limited to one use for two weeks only, and would then be terminated.

And, since RIM's RIM Wireless is my only choice for a wireless access provider, once the two weeks are up, I will, of course, be out of the wireless BlackBerry Edition.

Compared to a PC, the BlackBerry 957 Internet Edition is as dumb as any, because it demands almost nothing in the way of expertise or trouble from the user. However, it is also limited to the range of functions a

part of the line. Microsoft chief Bill Gates' mortal enemy, Steve McNulty of Sun Microsystems and Larry Ellison of Oracle, have always looked at the BlackBerry 957 as a PC more for making their base on. But, before personal computer hardware and, especially, Microsoft operating system software.

I have seen the future of computing, and it is the connected Internet appliance. But what will happen to our digital freedom when the personal computer goes the way of the dinosaur? Think of your relationship with your cable TV provider and tremble.

World Wide Web has given billions of individuals could use the devices to use a wireless network provider from a central authority in a single stroke.

By comparison, centrally controlled, collective computing systems based on UNIX or other mainstream operating systems typically operate from the top down.

new proprietary standards, decisions to create network service providers, successful access to information, managing, media, and maximum personalization and customization.

If the vision of "efficient" personal computing can survive the transition to the next level, we will all be the winners. ☐

## Red, white and green: Web activists win battle with Coca Cola

By Jeff Green

**T**he Web was originally a relatively non-commercial medium, nurtured by the Internet and online associated with the CNET network like to manage a decentralized, widely free exchange of ideas and information across the globe. In the last few years, however, multinationals of corporations, which have a very different, proprietary and profit-driven agenda for the Internet have aggressively colonized cyberspace.

The war between the "information wants to be free" crowd and the global brand names has increased for years. Corporations like the Walt Disney Company, Microsoft, Time Warner and Coca Cola defend their copyright and trademark and huge legal budgets.

Last corporate warriors, social and political activists continue, both law and outside action and innovation, on the corporate giant at their point.

Canada's Alliance (http://alliance.ca) is one of the oldest practitioners of "culture jamming"—the art of combining art and politics to open up alternatives to the corporate agenda.

Alliance has learned to use the Web as a key resource to economically and effectively get its counter-culture message across to an international audience.

Alliance and the environmental organization Greenpeace recently picked what seemed like a lightning bolt with Coca Cola, one of the world's most powerful corporate brands, over Coca Cola's practice of using environmentally unfriendly refrigeration technology.

Two single issues to be an odd choice of battleground, and one wonders that, according to environmentalists, Coca Cola is a major contributor to the pollution of the world's atmosphere and global warming as well as to provide its customers with cold-bird water.

From that point of view, making one global message out of an information crisis seems very reasonable, considering the damage caused to life on earth.

Alliance and Greenpeace created a very effective anti-corporate Web site at <http://www.alliance.ca>, featuring Coca Cola's last good image and taking it to the point of environmental catastrophe of releasing 100,000 tonnes of CO2 gas into the atmosphere.

The big issue Alliance and Greenpeace used in their campaign was Coca Cola's sponsor participation at the Athens Olympic Games in 2004. Especially considering the sponsorship of the Athens Olympic Games in 2004. Especially considering the sponsorship of the Athens Olympic Games in 2004.

Under several circumstances, the corporate response to a political action is to refuse to use the product. In this case, Alliance and Greenpeace are two groups that don't even really, and can make a convincing argument on grounds of speech and democratic rights grounds.

To us, movement, at the end of time, Coca Cola is not the issue. The case

they announced that it would phase out its greenhouse gas (GHC) use in favor of alternative technologies, at least in Athens in 2004.

In a highly critical press release, Greenpeace "congratulated" Coca-Cola for meeting Greenpeace's demand by pledging a new refrigeration policy to reduce its impact on global climate change before the world's first Green Games.

With the production, and release into the atmosphere of greenhouse gases not merely continuing but increasing at a frightening rate, the struggle to stop global climate change is the front war.

However, the Coca-Cola decision is at least a learning point that the Web can make a difference. ☐





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Figure 1 consists of three bar charts showing the number of cases for COVID-19, Dengue, and Malaria in the Americas from 2014 to 2020. The charts are organized by region: North America, Central America, and South America. Each chart shows the number of cases for each year, with a color-coded legend for each disease.

**North America**

| Year | COVID-19   | Dengue   | Malaria  |
|------|------------|----------|----------|
| 2014 | 0          | ~100,000 | ~100,000 |
| 2015 | 0          | ~100,000 | ~100,000 |
| 2016 | 0          | ~100,000 | ~100,000 |
| 2017 | 0          | ~100,000 | ~100,000 |
| 2018 | 0          | ~100,000 | ~100,000 |
| 2019 | 0          | ~100,000 | ~100,000 |
| 2020 | ~1,000,000 | ~100,000 | ~100,000 |

**Central America**

| Year | COVID-19 | Dengue   | Malaria  |
|------|----------|----------|----------|
| 2014 | 0        | ~100,000 | ~100,000 |
| 2015 | 0        | ~100,000 | ~100,000 |
| 2016 | 0        | ~100,000 | ~100,000 |
| 2017 | 0        | ~100,000 | ~100,000 |
| 2018 | 0        | ~100,000 | ~100,000 |
| 2019 | 0        | ~100,000 | ~100,000 |
| 2020 | ~100,000 | ~100,000 | ~100,000 |

**South America**

| Year | COVID-19   | Dengue   | Malaria  |
|------|------------|----------|----------|
| 2014 | 0          | ~100,000 | ~100,000 |
| 2015 | 0          | ~100,000 | ~100,000 |
| 2016 | 0          | ~100,000 | ~100,000 |
| 2017 | 0          | ~100,000 | ~100,000 |
| 2018 | 0          | ~100,000 | ~100,000 |
| 2019 | 0          | ~100,000 | ~100,000 |
| 2020 | ~1,000,000 | ~100,000 | ~100,000 |

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